15 The Self-Referential Scientist
Narrative, Media, and Metamorphosis in Cronenberg’s *The Fly*

*Bruce Clarke*

From the fearful cry of the human-headed fly snapped on a spider-web at the end of the 1958 movie—"Help me! Please, help me!"—to the warning against erotic entanglement with a man becoming a fly in the 1986 remake—"Be afraid! Be very afraid!"—tag lines from *The Fly* have been etched into popular mythology. *The Fly*’s cultural purchase also shows in its narrative transformations from ephemeral prose fiction to B-movie institution, its generation of continuations and variants. It first appeared as a short story by George Langelaan published in *Playboy* in June 1957 (Langelaan 1957). Within a year it was rescripted by James Clavell and made into the Twentieth-Century Fox movie directed by Kurt Neumann.¹ This was followed by *Return of the Fly* in 1959 and *Curse of the Fly* in 1965. Two decades later David Cronenberg rewrote Charles Edward Pogue’s rewrite and directed his major revision of 1986, followed in 1989 by *The Fly II.*² In 1997 it remerged once more in the *Simpsons* episode “Fly vs. Fly.”

Langelaan’s short story, Neumann’s movie, and Cronenberg’s remake are the versions that have effectively introduced new shapes into the social imaginary. Like *Frankenstein,* this breeding of narrative progeny has transformed a seemingly simple tale of technological horror into a collective and complex fabulation. *The Fly* is a piece of modern metamorphic mythology in the raw, a mutating narrative structure whose literal transformations, like the fantastic bodily changes under narration, are driven by the extensions of media devices. With a generation of cybernetic media culture under its belt, *The Fly*’s second narrative remediation in Cronenberg’s film probes deeply into the systematic underbelly of organic-technological hybridity under a first-order cybernetic regime, drawing out the abiding nightmare of mainstream control theory, the going out of control of both organic and machinic processes.

At the same time, *The Fly* updates a perennial mythos of bodily metamorphosis. Such stories are commonly precipitated by key mistakes or misreadings—often misplaced curiosities, but also, simple wrong turns, pieces of bad luck—for which culpable or inadvertent blunders the metamorphic condition is punishment or poetic justice (see Clarke 1995: 3ff.). *The Fly*
wires its transformative complications directly into mistaken communications, blunders lodged in both the communicator and the communication system. Each version centers on a singular scientist’s lone obsession with the creation of a teleporter. The main complication results when the inventor—André Deslambres in the 1950s versions, Seth Brundle in the 1980s, seeking to recreate either the world or himself, or both, test-pilots the device by transmitting himself across space. He sends the message of himself to himself. But unfortunately, due to an unlucky increment of noise in the signal, the message gets garbled in transmission, and he comes out of the receiver an insectoid monster.

In displaying the transformative power or daemonic agency of communications technology, this fable also unfolds the paradoxes of media. The Fly is precisely an allegory of modern media in their equivocation between transportation and transmission—ontologically, between matter and information. The teleporter is a paradoxical device to which organic bodies are offered for material transportation by means of informatic transmission. This is a topic treated in detail in a founding cybernetic document, quite conceivably a direct source for Langelan’s tale, Norbert Wiener’s *The Human Use of Human Beings: Cybernetics and Society:*

... We thus have two types of communication: namely, a material transport, and a transport of information alone. At present it is possible for a person to go from one place to another by material transportation, and not as a message.

... There is no fundamental absolute line between the types of transmission which we can use for sending a telegram from country to country and the types of transmission which at least are theoretically possible for a living organism such as a human being.

Let us then admit that the old idea of the child, that in addition to traveling by train or airplane, one might conceivably travel by telegraph, is not intrinsically absurd, far as it may be from realization....

I have stated these things, not because I want to write a science fiction story concerning itself with the possibility of telegraphing a man, but because it may help us understand that the fundamental idea of communication is that of the transmission of messages. (Wiener 1950: 105-111)

In each Fly, the metamorphic event is the matrix for a recursive network of biological, technological, and narrative system and environment references, unfolding the perils of unnatural and untested couplings and interpenetrations. Informatic code and narrative text merge into analogous communication functions: either is embedded within the other, as the mov-
takes himself as the object of his own investigations. The mediated duplications of The Fly play off the initially unitary status of the scientist who suffers the metamorphosis. The traditional figure of the scientist occupies a mode of modern selfhood paradoxically purified of otherness by “objectivity”, that is, by the supposed elimination of self-reference from his or her observations of objects and other subjects. In the Flies of the 1950s, for instance, André comes forward as a brilliant benefactor meriting our regard and his wife’s devotion. The disaster about to happen will be all the more catastrophic for destroying such a man. In Neumann’s film, after André unveils his teleporter to Hélène and lays her incredulity, he rhapsodizes over its world-transforming potential:

The disintegrator-integrator will completely change life as we know it. Think what it will mean! Food, anything, even humans, will go through one of these devices. No need for cars or railways or airplanes, even spaceships. We’ll just set up matter transmitting-receiving stations throughout the world, and later the universe. There’ll be no need of famine. Surpluses can be sent instantaneously at almost no cost anywhere. Humanity need never want or fear again!

Such heroic images embellish the significance of the non-self-reference of the proper scientist, who then personifies selflessness altogether, universal benevolence, the generosity of freely bestowing gifts upon humanity, the magnanimity of lifting old burdens off the race with his or her discoveries and inventions.

The standard formula for scientific propriety retailed here is the production of objectivity through the elimination of self-reference. One might see this as parallel to the standard goal of communications engineering, the elimination of noise and other distortions or errors from transmitted signals. This demand for an uncorrupted signal certainly weighs on André’s teleporter project as well. On the face of it, however, every version of The Fly replenishes the notion of objectivity as the elimination of self-reference by exposing the dire consequences when properly other-referential scientists take themselves as the objects of their own observations and as the subjects of their own apparatus.

And yet, it is an engineering truism that noise can never be entirely eliminated. Random fluctuations and Brownian flutters inhabit the very matter out of which communications media are constructed. Noise can only be compensated for (e.g., through protocols of redundancy in the message) and held within tolerable levels. In mechanical systems, noise and friction are the feedback of worldly operations, while in autopoietic systems, self-referential operations accommodate and bind the noise of mediations, the materialities of metabolism, perception, and communication, within the boundaries of the system, and as a result, viable systems self-adapt, evolve, or grow more complex. In other words, in media systems, informative noise is a marker of material self-reference in the midst of other-referential, supposedly dematerialized messages: noise is a self-referential effect asserting the indispensability of the material medium carrying the signal to its destination.

The Fly positions itself as a first-order cybernetic narrative precisely by its demonization, both of informative noise—the fly in the ointment of perfect transmissions—and of self-reference, which it conceptualizes only as a positive (unregulated) feedback that, in the experiments of André and Seth, spins totally out of control. Each Fly renders the cybernetic coupling of media systems and living bodies by linking narrative embedding to matters of mechanical and biological embedding and reproduction, yet each version has a blind spot that covers over the necessary integration and mutual compensation of mechanical, living, psychic, and social systems. Thus each version of the Fly demonizes self-reference even while operating self-referentially: the 1950s versions do so straightforwardly, Cronenberg’s with a self-reflexive wink.

The total mythos of The Fly is suffused with self-reference, individually in each version’s embedded narrative structures, and sequentially in the self-referential re-entry of the metamorphic event into the narrative transformations that underwrites the tale’s evolutionary social autopoiesis, the metamorphoses in the text of The Fly itself. Neumann’s Fly preserves the embedded structure of Langelaan’s textual original. In both 1950s versions, the story of André’s catastrophe is narrated by his wife Hélène, in explanation of her role in his partial obliteration by industrial steam press. Langelaan’s Hélène produces a written account embedded within a frame narrative produced by André’s brother, while Neumann’s Hélène offers an oral account realized cinematically as an extended flashback embedded within the main cinematic diegesis. Lacking the textual markers of prose fiction to indicate this shift in narrative level, the movie uses a standard pair of visual brackets, those classic wavy lines that relay narrative agency from one level to another. While Cronenberg’s telling of The Fly lacks the primary embedding device of the 1950s versions, a story within a story, he produces multiple scenes of cinematic embedding, enough to suggest a certain reflexive irony in the narration of Seth’s reflexive apocryphe.

In the 1950s versions, the doubling of narrative agencies, the up- and down-shift into and out of Hélène’s account of the affair, is tidy and discrete, and this stability at the borders of the narrative frame resonates with the style of André’s metamorphosis, which is also, while dire, tidy and discrete. Mistakenly teleported together, André and the fly swap heads and one arm apiece, and from that moment there are two Andrés, a fly-headed man and a man-headed fly. This doubling occurs along the two-sided border of the teleporter, a detail already articulated in Langelaan’s text, when Hélène recalls: “It was only after the accident that I discovered André had duplicated all his switches inside the disintegration booth, so that he could try it out on himself” (Langelaan 1966: 24). Here again, as a closed
technological system embedded within already embedded narrative frames, the teleporter feeds back into and duplicates the narrative that narrates it. As Mieke Bal has written in a less technological narratological context, “A traveler in a narrative is in a sense always an allegory of the travel that narrative is” (Bal 1997: 137).

SELF-REFERENCE IN CRONENBERG’S FLY

In the 1950s Flys the fly head and arm of the human metamorph emerge full-blown. Within days André feels his mind going, and with Hélène’s help he does away with himself before the mental mutation into something posthuman is complete. In contrast, Cronenberg’s Fly draws out the story time of both the bodily and the psychic transformations (see Pharr 1989: 37-46; Knee 1992: 20-34; Freudland 1996: 195-218; Wicke 1996: 302-315; Roth 2002: 225-241). Weeks elapse while the new, posthuman creature, the Brundelfly, reaches phenotypic and psychic expression from its conception through genetic merger in the teleporter. Cronenberg frontloads the self-transmission of the scientist to clear narrative space for the pseudo-evolution of the Brundelfly. Transposing the tale from the nuclear family to the singles scene, this version forgoes the familial pieties as well as the discrete narrative formalities of the prior versions and takes far less time to get down and dirty. At the same time, Cronenberg’s Fly pays significant homage not just to Neumann’s film but also, and less obviously, to Langelaan’s original text. While occurring in systematic communication with them, the metamorphic action in his film transforms his precursors into more complex shapes.

The movie opens with shy technoscientist Seth Brundle’s coaxing of intrepid science-journalist Veronica Quaife back to his laboratory pad set in an urban loft, furtively hoping it seems to seduce her with his telepods. Signaling Cronenberg’s knowing transmission of the original teleporter Langelaan assembled from “telephone call-boxes”, Ronnie jokes, “Oh, designer phone booths.” When she refers to them this way a second time, Seth curtly corrects her: “Telepods.” The updated substitution of “telepod” for “telephone” marks the amplification of “transportation” at stake in all versions of The Fly’s teleporter: the extension of the concept of transmission from informatic forms such as acoustic and visual vibrations to material substances such as inorganic and organic bodies.

The metamorphoses of media technology in Cronenberg’s Fly occur not just in the overall form of the teleporter, however, but also in the particular forms and implications of other communications devices—for instance, the keyboards to be played on by pre- and post-metamorphic hands. In both of the 1950s versions, the media keyboard in question is the typewriter that André used to repair his metamorphic aphasia, the loss of his spoken voice, and communicate in writing with Hélène. The mainframe com-
differentiations: early on, his version displays and contrasts two very different keyboards.

As the couple enters Seth's live-in laboratory straight from the Bartok Science Industries cocktail party, the cinematic frame centers Ronnie, seen from behind, between a telesop in the background on the left and an upright piano in the foreground on the right. Before drawing Ronnie's attention to the telesop and teleporter, Seth goes directly to the piano and plays, facetiously but with impressive facility, the first few bars of "Love Is a Many-Splendored Thing." This playfully-chosen melody will echo ironically against the gruesome turns of the love story to follow, but after this quick bit the piano never returns to the screen or the story. But this seeming throwaway moment makes the deeper suggestion that this keyboarded musical instrument, a communications device of a sort, is still a trivial machine, one that registers the instrumental mastery that Seth himself will throw away, as the repercussions of his coming jealous blunder—teleporting himself with a fly in the pod instead of with Ronnie in the room—take effect.

For the moment, however, manipulating this particular keyboard, Seth is still in full control, the musical output being entirely predictable from the fingered input. Cronenberg's film quickly contrasts the "trivial" status of the piano and its keyboard to the teleporter and its computerized control unit, which appears as a freestanding console, slightly smaller than but otherwise strongly resembling the upright piano, with an alphanumeric keyboard where the ivories are and a video display where the sheet music would go. And whereas in the 1950s film version, the manual typewriter and the mainframe computer remained mechanically separate and trivial in function, by the time of the Cronenberg film those real technologies had actually merged. In one of its smartest turns on the allegory of metamorphosis, Cronenberg's film literalizes the metaphor of the "personal computer" by bringing its computerized and keyboarded teleporter forth as the nontrivial machine par excellence—a person in its own right.

This newly autonomous and anthropomorphic form of the device now has a voice recognition function and the science-fictional abilities to communicate with its operator, to respond discursively to questions and to improvise solutions to problems put to it, both verbally by Seth and substantially by the objects to be teleported. Cronenberg's tale has coupled and fused communications and cognition, the typewriter keyboard and the computer as an artificially intelligent subject. As Jennifer Wicke has observed in a perceptive essay, the outcome of this technological metamorphosis is to supply Cronenberg's Fly with an additional, internal narrator:

Throughout the film the computer screen comes to fill the frame to show the change in scene, or to effect the cut—generally, these supercloseups of the screen occupy all of it, so that we, the audience, are reading the movie screen as if it were translated into a gigantic com-

puter monitor.... Often the screen is telling the tale, on its own.... The computer is also narrating to us, while it narrates Seth into the Brundle-Fly. (Wicke 1996: 305)

Seth's sentient computer participates in the infusion of cinematic narrative embedding that pushes Cronenberg's version of The Fly to a new level of explicitness about the interplay of self-reference, media systems, and metamorphosis. Cronenberg's computerized and communicative teleporter becomes a fully recursive narrative device, operating both at first and at second degree within the cinematic diegesis. At first degree, it will enact the bodily metamorphoses of the organic beings at hand, and at second degree, from its video screen within the cinematic frame, it will self-referentially narrate those very acts. Cronenberg morphs the teleporter into the ultimate unreliable narrator, an agent of confusion taking the story completely out of Seth's control.

Before that comes to pass, however, Seth remains, as he informs Ron-

nie, the "systems management man"—the central agent and kingpin of this technoscientific project. In that role, to demonstrate for her the teleporter he is still working to perfect, he requests a unique personal article; she obliges by peeling off a nylon stocking. Corresponding precisely to Hélène's position in the 1950s version as initially incredulous witness of André's tele-

portation of an ashy thrush, at first Ronnie sees the transmission of her stocking as a stunt. Cronenberg's film flips on the themes of narrative observation and mediated self-reference, first of all, as Ronnie starts to compute the significance of the event Seth has produced—when she secretly starts and then overtly displays her tape recorder. At first Seth protests as he resists his narrative reassignment from scientific subject to publicized object of document-

ation and scrutiny. However, his true proclivity for reflexivity shows itself in the narcissism that seems to induce him the next day to acquire and invite Ronnie to become the privileged observer of his experimental microcosm. Their romance emerges precisely under the sign of Ronnie's journalistic observation of his exhibitions. She propels this kingpin up by supplying an observing frame beyond his own, and by supplementing the lack in him, so he says, that still prevents his machinic proxy, the teleporter, from working successfully to, as it were, convey the story of living beings from pod to pod.

Although, unlike Hélène, she does not narrate per se during the story, in anticipation of the eventual narration she will deliver to her media outlet once she has the story in hand, Ronnie's role as designated observer ratchets up Hélène's role as internal focalizer. She and Seth agree on a plan by which he will become the commodified subject of a book whose narrative will climax with his own teleportation, and she will consummate his metamorphosis from scientific agent to media object by producing the textual mediations between Seth's technology and society at large. In the fantasy all this implies, Seth will enter at once the technological enclosure
of the telepods and the narrative enclosure of the text Ronnie will author. This is at least the promise if not the immediate enactment of narrative embedding, and a sort of contextual reformation by media system. In fact, these anticipated media transformations resonate with the ways that the teleporter itself—a machine for the transformation of bodies into transmissible signals—will unexpectedly transform Seth’s accomplishments, and so transform the story that actually occurs.

When we see them next, Ronnie has her video gear up and running. However, in the first experiment she is there to document, Seth’s teleporter goes awry, turning a baboon inside out. In the aftermath of that failure, Ronnie’s video cam produces the film’s first cinematic embedding. Shifting both Seth and his experimental apparatus up another narrative level, the video image fills out the frame of the cinematic narration, embedding the despondent experimenter to the second degree. With a slight blur to keep the diegetic brackets perceptible, Seth is recorded and displayed on a screen within a screen. From this doubly mediated position, he atones for the destruction of his simian assistant.

Ronnie: The world will want to know what you’re thinking.
Seth: Fuck is what I’m thinking!
Ronnie: Good....The world will want to know that.

Observed in deep self-examination over his and the teleporter’s failure, Seth then confesses to Ronnie and her recording devices his painful lack of knowledge of “the flesh.” This embedding and substitution of the video cam’s image for the cinematic frame happens only more in the movie, on the other side of Seth’s fateful self-teleportation. This scene, then, is the first of a pair of formal-thematic brackets between which Cronenberg embeds the central scene of metamorphic fusion between man and fly.

In the 1950s versions, the character-bound narrator/localizer Hélène is not there to witness or document the scene of André’s mis-transmission of himself. In these earlier Flies, subsequently communicating through typewritten notes, the metamorphic André remained either behind locked doors or veiled with a black cloth. Until she pulled his veil away, precipitating her own tragic transit from ignorance to revelation but enabling her later to narrate the shape of André’s changes, they were held in suspense. Cronenberg’s version, however, narrates Seth’s first self-transmission directly, and significantly, by means of mechanical mediation. Compounding the teleporter’s infolding of narrative self-reference, Cronenberg stages the video camera’s automatic recording of Seth’s self-experiment squarely within the main cinematic frame. In an amorous blunder, a drunken fit of jealous anger, he breaks his promise to give Ronnie firsthand witness of his first flight. However, unlike the scene after the baboon fasco, which narrated Seth within Ronnie’s video frame within the cinematic frame, this time the viewer does not see what Ronnie’s video camera sees; rather, that cam is framed within the main diegesis, its tripod and mechanism substituted for her bodily presence as the internal focalizer of Seth’s abrupt dash through the pods.

Again, in the 1950s versions, we understand that the main metamorphic catastrophe is completed in one swoop; what is delayed is its full revelation to another observer. Cronenberg’s Fly transforms and extends the narrative suspense by delaying the repercussions of Seth’s genetic fusion with the fly. He emerges from the receiving pod only slightly visibly altered, newly buff but also haggard and sweaty, like a coffee-drinker (Seth had earlier bragged to Ronnie about his professional espresso maker) who has just graduated to methamphetamine. Otherwise, for the moment the metamorphic consequences of his compound blunder remain embedded within his mutated genome, not yet enacted within the replica that has now reintegrated into one being the disintegrated originals of Seth Brundle and the housefly. Fresh from his exit pod, Seth articulates the ontological abyss his media technology has now opened up: “Am I different somehow? Is it live or is it Memorex?” But his joking distinction between a genuine original and its informative duplication already mistakes the nature of his dismutating. He is not a duplicate but a doppelganger, a posthuman hybrid constructed by the chance acquisition and inclusion of an alien genome. From this point on, Cronenberg’s Fly spins out in a series of vicious recursions.

**CYBERNETIC PURITY**

Going immediately back to Wiener’s and von Neumann’s original conceptual splicing of organic evolution with mechanical development, against a longer background of transformation stories centered on all manner of crossed lineages, the wider cybernetic and metamorphic contexts of Cronenberg’s Fly strongly overdetermine the notion of purity and its corruption. As it reflects Cronenberg’s Fly, the violation-of-purity theme also marks that narrative’s own impurity, so to speak, by linking it back to productive infections drawn from its precursor texts.

First of all, in his recovery of another detail of Langelaan’s text excised from the Clavell/Neumann version, Cronenberg reprises a passage from the short story presenting teleportation as a thrill ride, that is to say, violent self-transportation that only goes around in circles. In Hélène’s original account of André’s experiments, she recalls:

Our cocker spaniel...had been successfully transmitted half-a-dozen times and seemed to be enjoying the operation thoroughly; no sooner was she let out of the “reintegrator” than she dashed madly into the next room, scratching at the “transmitter” door to have “another go.” (Langelaan 1966: 23)
In Cronenberg, this lust for repetition of "animal sensation" morphs into Seth/Brundlefly’s protracted phase of teleporter mystique. Like someone on a bad Ecstasy binge, when his genetic adulteration with the fly first comes on "like a drug," Seth mystifies his affect, experiencing his self-transmission with the insectoid other as a purifying rush:

I am beginning to think that the sheer process of being taken apart atom by atom and put back together again—why, it’s like coffee being put through a filter! It’s somehow a purifying process—it’s purified me, it’s cleansed me. ... Human teleportation, molecular decimation, breakdown, and reformation is inherently purging.

This phase of Seth’s enthusiasm is predicated on his mistaken notion that he is still in total control of a trivial machine to which he can submit repeated input-output routines without concern for variation, malfunction, or "confusion"—a pure and simple machine purveying pure thrills. Seth the science geek gone to seed reverts to a stoned-out adolescent male, still clueless about “the flesh” yet momentarily empowered, treating female sex partners as interchangeable machine parts programmed to respond to his phallic input with identical productions of gratification and without complicating consequences. He implores Ronnie to trip out on the same thrill pill:

I want you to go through. I want to teleport you as soon as possible. Right now! You’ll feel incredible. Ronnie, I hardly need to sleep anymore and I feel wonderful. It’s like a drug, but a perfectly pure and benign drug!

Ronnie’s refusal to tag along on Seth’s trip draws from him a truly harrowing rant, the hallucinatory extremity of which fleshes out one of the supreme ontological bummer’s of Western civilization, a pure vision of the gendered metaphysical dualism that dogs the Neoplatonic mode of thought in general and of metamorphic narratives allied with it in particular:

You’re afraid to dive into the plasma pool, aren’t you? You’re afraid to be destroyed and recreated, aren’t you? Drink deep or taste not the plasma spring! You see what I’m saying? I’m not just talking about sex and penetration. I’m talking about penetration beyond the veil of the flesh! A deep, penetrating dive into the plasma pool!

“The veil of the flesh” is a hoary metaphysical trope, a mainstay of dogmatic metamorphic allegories in which the manifest transformation of the body is precisely a “veil” cloaking a discourse concerning the disembodied essence of the immortal soul (Clarke 1995: 122–128ff.). In this vision, bodies arise not as fabulously complex living systems, but “purely,” merely as momentary material embodiments of abiding immaterial, informatic or virtual forms. In this manic phase of self-inflation, Seth envisions his newly teleported incarnation as would some mythological god hovering over the mundane vale of wordly flesh, capable of decreating or recreating its own and others’ bodies at will.

What updates that allegory in this context is the notion of the “plasma pool,” a cyborgian notion combining “protoplasm” as a “pure” living medium with the instrumental controls of first-order cybernetics. As drawn from John von Neumann’s “General and Logical Theory of Automata,” the “plasma pool” relocates the notion of “purity” in the idea that “the flesh,” living tissue per se, can be reduced to a simple substance, can subsist as pure medium, without form but in-formed by an algorithm in command of a mechanical process (von Neumann 1963). His grammar elides the identity of the agent that performs this “deep, penetrating dive into the plasma pool,” but that omission centers Seth’s rant all the more on a classical patriarchal aporia: The occulted phallus that penetrates this watery spring is the veiled, defiled masculine soul that endows the gift of form upon simple, otherwise inert feminine matter.

Cronenberg’s Fly grants Seth his moment of superhuman masculine glory, of course, just to bring him crashing down, but not before the macho arm-wrestling match that maiins his burly opponent and wins him Tawny, a barely for the bed that Ronnie has left vacant. Seth revs himself up for sex one more time by sending himself through the teleporters, but gets a rude awakening when Ronnie returns with the lab report confirming that the bristles growing from the wound he picked up from the prongs of a stray electronic component are not human, certifying that he is now a posthuman metamorph. In the terms of Deleuze and Guattari’s A Thousand Plateaus, his becoming-animal is also a becoming-woman: no longer just the phallic diver, it/he is also the receptive plasma pool itself, a form emerging from a deep self-penetration of his own devising, by his own machines and the genome of a fly (Deleuze and Guattari 1987).

A month after re-conception within his own machine, Seth has finally cognized the reality of his metamorphic situation. Fitting into the wider backdrop of tales of metamorphic mishap, Seth confirms his own culpability, his personal responsibility for the metamorphic blunder, in remarking: “I was not pure. The teleporter insists on inner pure. I was not pure.” That is, he had programmed it to expect to deal only with one object at a time, thus forcing it to improvise when confronted with two at once. Debilitated and distressed, certain he is soon to die, Seth narrates for Ronnie the story of the teleporter’s nontrivial narration, its positive role in his predicament: “The computer...got confused. There weren’t supposed to be two separate genetic patterns—and it decided to, uh, splice us together. It mated us, me and the fly.... I’m the offspring of Brundle and house fly.” In this extremity, Seth’s cry repeats the famous last gasp of Neumann’s version’s human-headed fly: “Help me! Please, help me!”
After bargaining with her editor Stathis for his promise of aid, Ronnie returns to Seth's lab in order to document his critical condition on video tape. Prefiguring her own discovery very soon after that he has conceived a fetus of unknown, potentially metamorphic form, however, she finds Seth somehow reborn—no longer decrepit and depressed, walking with canes, but agile and playful, literally climbing the walls. With this turn of events, Cronenberg reopens the posthuman trajectory of the story that the 1950s versions foreclosed. This seeming recovery marks the onset of a potentially viable posthuman being, one ready to fuse his two lineages in an act of self-naming—or blasphemously, risen from the dead, self-christening. But the residue of Seth's humanity still registers in his claim of self-knowledge regarding the process he is undergoing. Embedded in the human capacity to self-reflect, to take oneself as the object of one's own cognition, the paradox of self-reference remains Seth Brundle's cross to bear:

Seth: The disease has just revealed its purpose. We don't have to worry about contagion anymore. I know what the disease wants.

Ronnie: What does the disease want?

Seth: It wants to turn me into something else...I'm becoming something that never existed before. I'm becoming...Brundlefly. Don't you think that's worth a Nobel Prize or two?

As previously mentioned, there are two scenes, like bookends on either side of his initial self-transmission, in which Brundle is cinematically narrated on a screen within a screen. The second of these scenes occurs just after the self-naming of the Brundlefly. In front of Ronnie's video cam for the benefit of Stathis, Brundlefly performs a kind of Mr. Wizard science skit on the self-referential topic, "How does Brundlefly eat?" With Stathis as the internal viewer of this revolting vignette, the former Seth and his vomit drop are now embedded to the third degree, multiply framed within the main cinematic frame by video cam display playing on the television monitor in Ronnie's apartment. As with the first scene of cinematic embedding, Cronenberg aligns the depth of narrative level with the depth of his main character's psychic and bodily abasement.

Cronenberg also plays on the formal resonance between narrative and reproductive embedding, between stories within stories and gestating fetuses within pregnant mothers. The similarity of Seth's telepods to maternal wombs has often been noticed. This connection is compounded by the traditional correlation between metamorphic narratives, maternal transformations, and other family matters—in particular, the link between incest and monstrosity. The transformations of maturation, pregnancy, and delivery in all sexually-reproductive organisms map out a pervasive biological and natural subtext of metamorphic fantasies (see Clarke 1995: 113–147). Cronenberg's Fly couples mechanical, social, and biological systems into a fantastic fusion of informatic duplication, narrative embedding, and sexual reproduction.

Just after Stathis views her video tape of Brundlefly at lunch, Ronnie reveals that she is pregnant by it/him. With this turn of events, the metamorphic themes and narrative forms of The Fly intertwine and come full circle. The virtual destination of this tale's forms of embedding is the fusion of the media technology of teleportation with the maternal function of sexual reproduction. Seth in his transmission pod is already a posthuman fetus in a technological womb; Ronnie's troubling pregnancy doubles and confirms this reproductive frame. The informatic transmissions from pod to pod reenact genetic transmissions from womb to womb, in this case making instantaneously spectacular the potential for copying errors in the fantastic fusions of acquired genomes, not to mention the normal recombination of genetic contributions from the mitotic forms of parental sex cells. In allegorical parallel with Seth's technological rebirth—the con-fusion of transmission that delivers the metamorphosing Brundlefly—this narrative now embeds itself with a scene of monstrous miscarriage.

Without marking any shift in diegetic level, the cinematic narration cuts immediately from the scene of Ronnie's confession of pregnancy to one of her arrival with Stathis at a hospital. To complete by surgical abortion, so it would seem, a partial miscarriage of the fetus she had conceived with Seth after his genetic fusion with the fly, Ronnie is wheelchaired into an operating room, where she delivers from the crypto-pod of her womb a hideous slimy footlong squirming grub, either the premature fetus or full-formed infant monster sired by the Brundlefly. As she screams in terror, the scene immediately breaks, redistributing the shock of this horrific delivery back to the main narrative. Only now the cinematic narrator marks the embedded frame of that episode by cutting to Ronnie thrashing awake from a nightmare and curling into fetal position. The ontological downshift back to the main storyworld supplies a cheap and nasty narrative lurch, of a piece with the vicious or backhanded reflexivity of the text as a whole.

In addition to the earlier cinematic framings of screens within screens, then, this scene endows the film with an ultimately if not initially explicit moment of diegetic or narrative embedding, by placing an image of abortive reproduction into a dream fold of the main storyworld, and then aborting it. Ronnie's dream of witnessing herself deliver the monstrous grub is the direct counterpart of the scene of Hélène's witness of André as monstrous man-fly, and in Neumann's version, the fly-headed André's fly-eyed counter-shot of Hélène. As internal focalizers, both the wife and the girl-friend are victimized by visions of "scientific" monstrosity, spectacles the most monstrous precisely as beheld by these intimate beholders. And both scenes of visual assault are marked by rude twists put on forms of narrative embedding.
THE BRUNDLEFLY PROJECT

As a discrete short episode embedded within the main narrative, Ronnie's abortion dream is also embedded within the longer episode of the Brundlefly Project, the unfolding of which draws Cronenberg's version of the Fly narrative to a close. However, at the same time that the narrative presses toward the posthuman emergence of "something that never existed before," it is also retrofitted with a eugenic scenario that reinstates the theme of genetic purity in the midst of the genetic fusions. Echoing classical metamorphic romances seeking narrative resolution in the return of the lost human form, as the Brundlefly is increasingly expressed in the creature that Seth is becoming, the Brundlefly Project seeks to thwart or control that process, to "refine" it, limiting its posthuman consequences by further infusions of "pure human subjects." This mishmash of motives wonderfully twists out the ontological complications of a creature that is literally a two-sided form and of two minds about its future prospects. As Brundlefly pecks at the keyboard with metamorphosing hands bearing fused digits, the computer picks up the narration by reading out the following display:

THE BRUNDLEFLY PROJECT
PROBLEM: TO REFINE FUSION PROGRAM
GOAL: TO DECREASE TO A MINIMUM
THE PERCENTAGE OF FLY
IN BRUNDLEFLY
> SOLUTION: THE FUSION BY GENE-SPlicing
OF BRUNDLEFLY INTO ONE OR
MORE PURE HUMAN SUBJECTS

But at this very moment, the attempt to counter the posthuman is thwarted by a cybernetic twist on the posthuman turn in metamorphic tales, that apathetic moment when the human metamorph first tries to speak but can only, like Apuleius's Lucius, bray like an ass or, like Kafka's Gregor, chirp like an insect. Once Brundlefly absorbs the readout above, it voices a further oral command: "I want a disk—give me preliminary information...." But the computer's voice recognition program marks and narrates the precise moment when the process of posthumanization proceeds across the line of humanity into recognizable hybridity:

> ERROR: PATTERN MISMATCH
VOICE NOT RECOGNIZED
VOICE NOT RECOGNIZED
VOICE NOT RECOGNIZED...

In H. G. Wells's The Time Machine, accompanied by his devoted posthuman companion Weena, the Time Traveler comes across a ruined museum wherein the world of that future had forgotten a past containing his former present. Cronenberg famously places into his contemporary Fly the Brundlefly Museum of Natural History, wherein are collected the bodily relics of its/his human past. When Ronnie returns the next time, to tell the being she still regards as Seth about her pregnancy and decision to terminate it, before she can deliver that message Brundlefly drives her off with a warning regarding its/his irreparable bifurcation into a two-sided being, oscillating between and thus "representing" both male human and male insect subject positions:

Seth: Have you ever heard of insect politics? Neither have I. Insects don't have politics.... We can't trust the insect. I'd like to become the first...insect politician....

Ronnie: I don't know what you're trying to say.

Seth: I'm saying, I'm an insect who dreamt he was a man and loved it. But now the dream is over, and the insect is awake.

The contrast between Brundlefly's rewording of the sense of being an "insect politician" and that dialogue's probable source in Taoist scripture offers a striking comparison between the cybernetic present and the mythological past, Western rationality and Eastern religion.

Once upon a time, I, Chuang Tzu, dreamt I was a butterfly, flittering hither and thither, to all intents and purposes a butterfly. I was conscious only of following my fancies as a butterfly, and was unconscious of my individuality as a man. Suddenly I awakened, and there I lay, myself again. Now I do not know whether I was then a man dreaming I was a butterfly, or whether I am now a butterfly dreaming I am a man. Between a man and a butterfly there is necessarily a barrier. The transition is called metempsychosis.

The classical Taoist sage sees the species barrier between man and butterfly as transcendable only after death with the transference of the soul from one to another body—a motive for the narration of metamorphosis going back to its archaic mythological sources. But given that barrier, Chuang Tzu's focus is on the undecidedness of the oscillation, that is, the paradox presented by the dream life that lies embedded within the mind with a reality of its own putting one's waking reality into question. In contrast, Brundlefly is the product of an immediate living/mechanical transcendence of the species barrier; that is, it/he is a modern media metamorph and not a mythical serial metempsychotic. In the fly mode of its subject-oscillations, moreover, it denies the undecidedness of the question. As the narrator of Kafka's Metamorphosis had put it regarding Gregor's uncanny awakening: "It was no dream." So it/he gives Ronnie fair warning that man and fly will
cohabit this metamorph only until the awakened fly takes full control: "I'll
hurt you if you stay."

And despite Ronnie's taking the hint and running away to procure an
abortion for real, it is not the fly but the Brundle in Brundlefly who bursts
into the operating room and carries Ronnie back to the lab. Their baby
"might be all that's left of the real me," without which the Brundlefly Pro-
ject will fall short of its "purest" goal, "to decrease to a minimum the per-
centage of fly in Brundlefly." Technoscientific to the bitter end, Brundlefly
remains, as Seth had been, the object of its/its own project in posthuman
self-fashioning. As Bruno Latour writes in Aramis or The Love of Tech-
ology, when technological designs begin, "there is no distinction between
projects and objects... Here we're in the realm of signs, language, texts";
Brundlefly's attempt to refine its/its own posthuman constitution fictively
reflects the technological innovator's actual quest to "translate" or "nego-
iate with" both the human and the nonhuman components of the design:
"the innovator has to count on assemblages of things that often have the
same uncertain nature as groups of people... You have to get a whole list
of things interested in the project" (Latour 1996: 24, 57).

In the climactic scene that follows, Brundlefly negotiates with humans
who are decidedly not "interested in the project." Ronnie refuses to abor-
t her quest for an abortion, and Stathis shows up at the lab with a
skeet-shooting rifle. It will also turn out that the "assemblages of things"
involved, the teleporter and its rewired pods, will "have the same uncertain
nature." This terminal episode further entrenches the traditional themes
of metamorphic embedding at both the bodily and narrative levels within
the cybernetic realm of machinic couplings with organic forms. As a mon-
strous organic being morphed by the teleporter, accordingly the teleporter
has now been re-morphed by the Brundlefly. Initially conceived as a linear
transportation device moving goods from pod 1 to pod 2, by splicing in the
previously decommissioned "clunky" prototype pod, Brundlefly reconflig-
ures the teleporter precisely as it had demonstrated itself to be in its own
instance, a nontrivial, recursive, or recombinant gene-splicing device, now
retrofitted for the "creative" merging of the contents of pod 1 and pod 2
into a composite arriving at pod 3. With Stathis once again as internal
focalizer, the computer narrates:

**GENE-SPlicing METHOdology**
**HARDWARE:**
- **TELEPOD 1: TRANSMITTER OF SUBJECT A**
- **TELEPOD 2: TRANSMITTER OF SUBJECT B**
- **TELEPOD 3: RECEIVER OF GENETICALLY-FUSED A-B COMBINATION SUBJECT**

After putting Stathis out of commission with vomit drop, Brundlefly
accedes to Ronnie's plea to spare his life in order to reopen a final round of
negotiations with her: "Help me be human...more human than I am alone."
The consummation of the Brundlefly Project marks the systemic closure
of the human itself in its inhospitality to the nonhuman, its doggedly in-turn-
ing self-involvement. But by now, insect politics have demented Brundlefly's
traditional humanistic family values: "I go there, you go there, we come
apart and come together—there: you, me, and the baby...together... We'll
be the ultimate family." One can only expect from the climactic three-way
fusion of Brundlefly, Ronnie, and their fetus a monstrousity worthy of its
fetishistic precursor, Langelaan's climactic three-way merger of André, the
fly, and the cat Dandeloo.

But we are spared that particular vision in favor of a truly cybernetic
consummation. Instead of Hélène's pulling off the veil of cloth to reveal
André as a composite man/fly metamorph, here Ronnie's resistance to
Brundlefly's final negotiation precipitates the final collapse of its two-sided
physical form, as the "space bug" or monster fly, the imago or adult stage
of the metamorphic Brundlefly, hatches entirely out of the "veil of the flesh,"
the tattered chrysalis of Seth Brundle's human body (on the "space bug," see
Kirkman 2006). It is a moment both visually horrific and conceptually
spectacular, in that it renders to view the phenotypic resolution of the
organic process set into motion by the inadvertent genome-splicing of
Brundle and fly. Thus, while terrifying, it also produces a satisfaction in
the narrative completion of a metamorphic plot. However, Cronenberg is
not done yet.

In other, affirmative, stories of posthuman metamorphosis, such as
Damon Knight's Beyond the Barrier or Octavia Butler's Imago, the arc of
the plot does end here, with the achieved transcendence of the human. A
being emerges into which the human has been absorbed, within which it
is rendered, like the mitochondrion that was once a free-living bacterium,
one of several components of a higher-order living system. Contemporary
work in biological systems has strongly endorsed the view that natural evolu-
tion is driven not merely by random mutation but more importantly by
the integration of separate genomes into viable consortiums. In this regard,
The Fly actually has it half right: separate genomes can and do join forces,
but when this happens, they are not just randomly scrambled together, as
implied by the computer's report that Seth and the fly have been "fused at
the molecular-genetic level." Rather, in the accretion of genomes within
a host organism, their given or pre-evolved structures are left intact but
operationally coupled together to produce a higher-order transformation,
a natural metamorphosis, of the living system at hand. Lynn Margulis, the
biologist at the forefront of this crucial refinement in evolutionary thought,
puts it like this: "Analogous to improvements in computer technology,
instead of starting from scratch to make all new modules again, the symbi-
sosis idea is an interfacing of preexisting modules. Mergers result in the
emergence of new and more complex beings" (cited in Brockman 1995:
134).
From this vantage we can see again the way that Cronenberg’s *Fly* teeters on the conceptual divide between first- and second-order cybernetics, or doxical recursions. For in the final resolution of this recursive narrative arc, as the composite teleporter feeds the output of subsystems back into its input, both the organic and the mechanical systems at hand are not just merged into a consortium of semi-autonomous modules, but scrambled together into a horrific hash. This outcome is neither literally nor fictively necessary, but dictated only insinuative as in the unfolding of *Fly* mythology up to this point, the posthuman remains ultimately foreclosed and the monster must die. Thus, we are given a choice between two equally exquisite nonviable options: and instead of the “ultimate family” of Brundlefly’s nostalgic organic desire, we get the terminal fusion of the organic space bug with the mechanical teleport itself: “fusion of Brundlefly and teleport successful.”

This narrative closes with the consummation of Brundlefly’s death spiral within its/his own cybernetic loop: the Seth-sentence left within the scrambled creature makes its/his final self-referential gesture, crawling out of the receiver pod to aim the shoot-rite in Ronnie’s hands where its/his brains would go and effectively implores her to render it/his mercy killing. But this conclusion also marks the family-romantic nostalgia that folds Cronenberg’s *Fly* back upon Neumann’s version of the conclusion, as the surviving mother and son go off into the sunset with Vincent Price as the father-surrogate. *This Fly* consumes itself by its own death drive to resolve its productive detour in the restoration of its prior narrative conditions. Thus we get the message that posthuman metamorphosis is inevitably a death trip, as the “sex appeal of the inorganic” trumps, for this round of the mythic cycle at least, the living systemic imperative of autopoeitic continuation (Foster 1996). But the repetition compulsion works both ways, and one anticipates that media conditions within the social subsystems responsible for *The Fly* in the first place will, at some future moment, revive this *Fly* once again.

ACKNOWLEDGEMENTS

I would like to thank Bernd Hüppauf and Peter Weingart for their support, and Colin Milburn for his insightful comments on an earlier draft of this essay.

NOTES


3. All citations are from this volume. The story is also available in Ackerman and Stine (1994).


5. Helen W. Robbins has written well on the theme of womb envy in this film and Cronenberg’s following production, *Dead Ringers* (Robbins 1993).


BIBLIOGRAPHY


Contributors

Morana Alač is Assistant Professor of Communication and Science Studies at the University of California, San Diego. Her work concerns ways in which scientists study cognition in environments heavily sustained by advanced technologies. By looking at everyday work of science, Alač pays particular attention to the interface between the body and technology. University of California at San Diego, 9500 Gilman Drive 0503, La Jolla, CA 92093-0503, USA. alac@ucsd.edu http://hci.ucsd.edu/morana/.


Lars Bluma, PhD, lecturer in the department of the history of technology and environment (Ruhr-Universität Bochum) since 1999. Received his doctorate in 2004 for a study of Norbert Wiener and the origins of cybernetics. Ruhr-Universität Bochum, Historisches Institut, Technik-und Umweltgeschichte, D-44780 Bochum, Germany. lars.bluma@ruhr-uni-bochum.de http://www.ruhr-uni-bochum.de/tug/bluma.html

Lisa Cartwright is Professor of Communication at the University of California at San Diego, where she is also appointed in the programs in Science Studies and Critical Gender Studies. Her books include Screening the Body: Tracing Medicine’s Visual Culture (Minnesota 1995), Practices of Looking: An Introduction to Visual Culture (co-authored with Marita Sturken, Oxford 2002), and Moral Spectatorship, a book